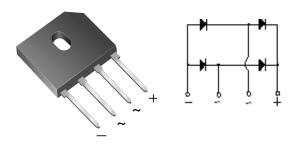


## Vishay General Semiconductor

# **Glass Passivated Single-Phase Bridge Rectifier**



Case Style GBU

PRIMARY CHARACTERISTICS							
I <sub>F(AV)</sub> 4 A							
$V_{RRM}$	50 V to 1000 V						
I <sub>FSM</sub>	150 A						
I <sub>R</sub>	5 μΑ						
V <sub>F</sub>	1.0 V						
T <sub>J</sub> max.	150 °C						

### **FEATURES**





· Ideal for printed circuit boards



• High surge current capability

High case dielectric strength of 1500 V<sub>BMS</sub>

RoHS COMPLIANT

Solder dip 260 °C, 40 s

 Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC

### **TYPICAL APPLICATIONS**

General purpose use in ac-to-dc bridge full wave rectification for monitor, TV, printer, switching mode power supply, adapter, audio equipment, and home appliances applications.

### **MECHANICAL DATA**

Case: GBU

Epoxy meets UL 94V-0 flammability rating

Terminals: Matte tin plated leads, solderable per

J-STD-002 and JESD22-B102

E3 suffix for consumer grade, meets JESD 201 class

1A whisker test

Polarity: As marked on body

**Mounting Torque:** 10 cm-kg (8.8 inches-lbs) max. **Recommended Torque:** 5.7 cm-kg (5 inches-lbs)

<b>MAXIMUM RATINGS</b> (T <sub>A</sub> = 25 °C unless otherwise noted)									
PARAMETER	SYMBOL	GBU4A	GBU4B	GBU4D	GBU4G	GBU4J	GBU4K	GBU4M	UNIT
Maximum repetitive peak reverse voltage	$V_{RRM}$	50	100	200	400	600	800	1000	V
Maximum RMS voltage	V <sub>RMS</sub>	35	70	140	280	420	560	700	V
Maximum DC blocking voltage	$V_{DC}$	50	100	200	400	600	800	1000	V
$ \begin{array}{ll} \text{Maximum average forward} &  \text{$T_{\rm C}$ = $100  ^{\circ}\text{C}$}  ^{(1)} \\ \text{rectified output current at} &  \text{$T_{\rm A}$ = $40  ^{\circ}\text{C}$}  ^{(2)} \\ \end{array} $	I <sub>F(AV)</sub>				4.0 3.0				Α
Peak forward surge current single sine-wave superimposed on rated load	I <sub>FSM</sub>	150				Α			
Rating for fusing (t < 8.3 ms)	I <sup>2</sup> t	93				A <sup>2</sup> s			
Operating junction and storage temperature range	T <sub>J</sub> , T <sub>STG</sub>	- 55 to + 150				°C			

#### Notes:

(1) Unit case mounted on 1.6 x 1.6 x 0.06" thick (4.0 x 4.0 x 0.15 cm) aluminum plate

(2) Units mounted on P.C.B. with 0.5 x 0.5" (12 x 12 mm) copper pads and 0.375" (9.5 mm) lead length

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<b>ELECTRICAL CHARACTERISTICS</b> (T <sub>A</sub> = 25 °C unless otherwise noted)										
PARAMETER	TEST CONDITIONS	SYMBOL	GBU4A	GBU4B	GBU4D	GBU4G	GBU4J	GBU4K	GBU4M	UNIT
Maximum instantaneous forward drop per diode	4.0 A	V <sub>F</sub>	1.0					٧		
Maximum DC reverse current at rated DC blocking voltage per diode	T <sub>A</sub> = 25 °C T <sub>A</sub> = 125 °C	I <sub>R</sub>	5.0 500				μΑ			
Typical junction capacitance per diode	4.0 A, 1 MHz	СЈ		10	00			45		pF

THERMAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted)							
PARAMETER	SYMBOL GBU4A GBU4B GBU4D GBU4G GBU4J GBU4K GBU4M UNIT						UNIT
Typical thermal resistance	$R_{\theta JA}^{(2)}$ $R_{\theta JC}^{(1)}$	22 4.2				°C/W	

#### Notes:

- (1) Unit case mounted on aluminum plate heatsink
- (2) Units mounted on P.C.B. with 0.5 x 0.5" (12 x 12 mm) copper pads and 0.375" (9.5 mm) lead length

ORDERING INFORMATION									
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE					
GBU4J-E3/45	3.565	45	20	Tube					
GBU4J-E3/51	3.565	51	250	Paper tray					

## **RATINGS AND CHARACTERISTICS CURVES**

(T<sub>A</sub> = 25 °C unless otherwise noted)

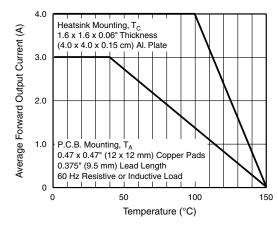


Figure 1. Derating Curve Output Rectified Current

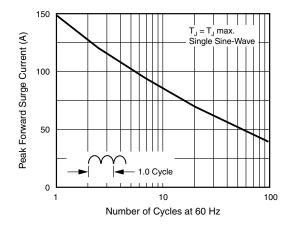


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current Per Diode



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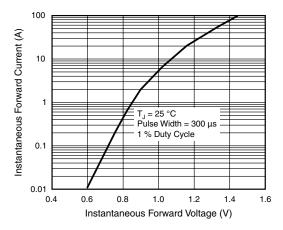


Figure 3. Typical Forward Characteristics Per Diode

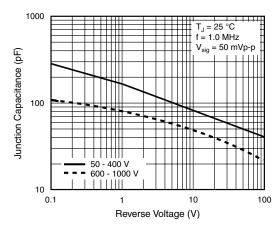


Figure 5. Typical Junction Capacitance Per Diode

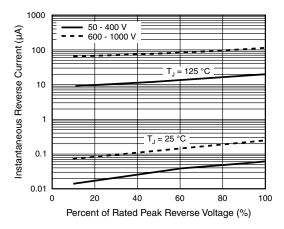


Figure 4. Typical Reverse Leakage Characteristics Per Diode

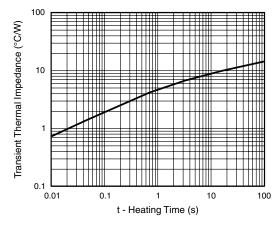
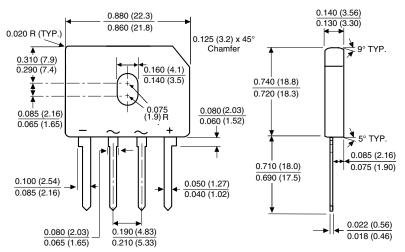


Figure 6. Typical Transient Thermal Impedance

## **PACKAGE OUTLINE DIMENSIONS** in inches (millimeters)

## Case Type GBU



Polarity shown on front side of case, positive lead by beveled corner



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